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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,794	07/27/2001	Augustus W. Winfield	10007719-1	8821

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HEWLETT-PACKARD COMPANY  
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EXAMINER
POPHAM, JEFFREY D

ART UNIT	PAPER NUMBER
2137	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/916,794	<b>Applicant(s)</b> WINFIELD ET AL.	
	<b>Examiner</b> Jeffrey D. Popham	<b>Art Unit</b> 2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20010727</u> . | 6) <input type="checkbox"/> Other: ____  |

***Remarks***

Claims 1-12 are pending.

***Specification***

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The abstract of the disclosure is objected to because the claimed new material is not complete in the abstract. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over "A Case for Redundant Arrays of Inexpensive Disks (RAID)", hereinafter referred to as RAID88 in view of "The Ultimate Computer Buyer's Guide", hereinafter referred to as UCBG.

Regarding Claim 1,

RAID88 discloses a method of storing a file, comprising:

Partitioning the file into a plurality of parts (Page 112, Column 2, Paragraph 1); and

Storing the parts onto a plurality of media, so that at least two parts are stored on different media, and fewer than all the parts are stored on any one of the media (Page 112, Column 2, Paragraph 1).

RAID88 does not disclose the use of write-once media.

UCBG, however, discloses the use of WORM (write-once, read many) media (Page 5, Paragraphs 6-8). This new method would be the method from RAID88 recording all data onto write-once media. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use write-once media in the method from RAID88 in order to obtain a non-modifiable data storage medium that has a long lifespan, as taught by UCBG.

Regarding Claim 2,

RAID88 discloses that at least some bytes in the file are divided so that the bytes are partially located in at least two of the parts, and less than all of any one byte is located on any one of the media (Page 112, Column 2, Paragraph 1 and Figure 3).

Regarding Claim 3,

RAID88 discloses the steps of interleaving at least one of the parts with parts of other files (Page 112, Column 2, Paragraph 1) and storing the interleaved parts onto the plurality of media (Page 112, Column 2, Paragraph 1).

Regarding Claim 8,

RAID88 discloses the steps of computing data integrity confirmation [information on check disks] from data in the file (Page 112, Column 2, Paragraph 1) and storing the data for integrity confirmation (Page 112, Column 2, Paragraph 1).

Regarding Claim 9,

RAID88 discloses that the data for integrity confirmation is stored on a medium that is separate from the media used for storing parts of the file (Page 112, Column 2, Paragraph 1). The separate medium here is the check disks that are solely for storing integrity information.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over RAID88 in view of UCBG, further in view of "Distributed Raid – A New Multiple Copy Algorithm", hereinafter referred to as DRAID.

The method of RAID88 as modified by UCBG does not disclose that the media are physically located in a plurality of different storage systems.

DRAID, however, discloses that the media are physically located in a plurality of different storage systems (Page 2, Paragraph 1). This new method would be the method of RAID88 as modified by UCBG distributing the storage media to physically separated storage systems. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to distribute the system from RAID88 as modified by UCBG in order to maintain security for data held within the system through integrity checking and recovery from remote locations, as taught by DRAID.

4. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over RAID88 in view of UCBG, further in view of Winkler (U.S. Patent 3,544,777).

Regarding Claim 5,

The method of RAID88 as modified by UCBG does not disclose that at least some parts of the data can be stored multiple times.

Winkler, however, discloses that at least some parts are stored multiple times (Column 2, lines 38-45). This new method would be the method of RAID88 as modified by UCBG duplicating every piece of

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information stored on a medium and storing the duplicate on another medium. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to store data multiple times in order to allow the system to continue operation when a medium has failed or been corrupted in some manner, as well as allowing that medium to be replaced and still contain the same data, as taught by Winkler (Column 2, lines 61-75).

Regarding Claim 7,

The method of RAID88 as modified by UCBG and Winkler does not disclose that at least some of the data is stored on different media.

At least some parts are stored multiple times on different media (Column 2, lines 38-45). This new method would be the method from RAID88 as modified by UCBG and Winkler duplicating every piece of information stored on a medium and storing the duplicate on another medium. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to store data multiple times in order to allow the system to continue operation when a medium has failed or been corrupted in some manner, as well as allowing that medium to be replaced and still contain the same data, as taught by Winkler (Column 2, lines 61-75).

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over RAID88 in view of UCBG and Winkler (U.S. Patent 3,544,777), further in view of Denney et al. (U.S. Patent 3,729,725).

The method of RAID88 as modified by UCBG and Winkler does not disclose that at least some parts are stored multiple times on one medium.

Denney et al., however, disclose that at least some parts are stored multiple times on one medium (Column 3, lines 53-61). This new method would be the method of RAID88 as modified by UCBG and Winkler redundantly storing data on the same medium. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to redundantly record data on the same medium in order to protect against errors and give high reliability in recording, since the probability of the data being incorrectly recorded twice is very low, as taught by Denney et al. (Column 2, lines 31-35).

6. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over RAID88 in view of UCBG, further in view of Islam et al. (U.S. Patent 5,774,641).

Regarding Claim 10,

The method of RAID88 as modified by UCBG does not disclose computing integrity data for an entire medium, only computing integrity information for each data block.

Islam et al., however, disclose the steps of computing data for integrity confirmation from data on each medium (Column 9, lines 1-7) and



storing the data for integrity confirmation (Column 9, lines 7-9). This new method would be the method of RAID88 as modified by UCBG computing and storing the integrity confirmation data obtained from the data on a medium. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to compute integrity information for each medium as a whole in order to determine when a medium fails and to reconstruct the data that was on that medium, as taught by Islam et al. (Column 10, lines 10-16).

Regarding Claim 11,

The method of RAID88 as modified by UCBG and Islam et al. does not disclose storing the integrity confirmation data on a separate medium.

Islam et al., however, disclose that the data for integrity confirmation is stored on a different medium from which the data for integrity confirmation is computed (Column 8, lines 1-9). This new method would be the method of RAID88 as modified by UCBG and Islam et al. storing the integrity confirmation data on a separate medium from that which the integrity confirmation data was computed. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to compute integrity information for each medium onto a separate medium in order to determine when a medium fails and to reconstruct the data that was on that medium, as taught by Islam et al. (Column 10, lines 10-16).

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over RAID88 in view of UCBG, further in view of Jamroga et al. (U.S. Patent 6,574,742).

The method of RAID88 as modified by UCBG does not disclose encryption.

Jamroga et al., however, disclose the step of encrypting the file before partitioning the file into a plurality of parts (Column 10, lines 25-29). This new method would be the method of RAID88 as modified by UCBG encrypting the data before partitioning and distribution. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to add the step of encryption to this method in order to augment the data so that unauthorized access is prohibited, as taught by Jamroga et al.

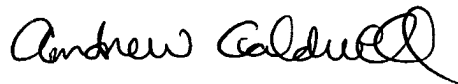
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey D. Popham whose telephone number is (571)-272-7215. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571)-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**ANDREW CALDWELL**  
**SENIOR PATENT EXAMINER**